

ABSTRACT

An ultra-wideband pulse modulation apparatus, system and method is provided. The pulse modulation method increases the available bandwidth in an ultra-wideband, or impulse radio communications system. One embodiment of the present invention comprises a pulsed modulation system and method that employs a set of different pulse transmission, or emission rates to represent different groups of binary digits. The modulation and pulse transmission method of the present invention enables the simultaneous coexistence of the ultra-wideband pulses with conventional carrier-wave signals. The present invention may be used in wireless and wired communication networks such as CATV networks.